Complete Summary

TITLE

Intensive care: number of ventilator days where the patients received deep vein thrombolysis (DVT) prophylaxis.

SOURCE(S)

Specifications manual for national hospital quality measures - ICU. Oakbrook Terrace (IL): Joint Commission on Accreditation of Healthcare Organizations (JCAHO); 2005. various p.

Measure Domain

PRIMARY MEASURE DOMAIN

Process

The validity of measures depends on how they are built. By examining the key building blocks of a measure, you can assess its validity for your purpose. For more information, visit the Measure Validity page.

SECONDARY MEASURE DOMAIN

Does not apply to this measure

Brief Abstract

DESCRIPTION

This measure is used to assess the number of ventilator days where patients received deep vein thrombosis (DVT) prophylaxis.

The results of this measure should also be analyzed in conjunction with ICU-1: Ventilator-associated Pneumonia (VAP) Prevention - Patient Positioning, as elevation of the head of the bed may contribute to venous stasis and deep vein thrombosis. See the related National Quality Measures Clearinghouse (NQMC) measure summary Intensive care - ventilator-associated pneumonia (VAP) prevention: number of ventilator days where the patient's head of bed (HOB) is elevated equal to or greater than 30 degrees.

RATIONALE

Approximately 5 million episodes of deep vein thrombosis (DVT) occur annually in the United States, leading to about 500,000 cases of pulmonary embolism, of which 10% are fatal. Prophylactic treatment is essential to reduce the morbidity and mortality of this disease. Mechanically ventilated patients are at significant risk for DVT because of diminished venous return of blood to the heart occurring with mechanical ventilation. In these critically ill patients, thromboprophylaxis is effective for preventing DVT. Multiple therapies for DVT prophylaxis have been consistently reported to reduce the risk of DVT in critically ill patients admitted to medical and surgical intensive care units (ICUs).

PRIMARY CLINICAL COMPONENT

Intensive care; mechanical ventilation; deep vein thrombosis (DVT); prophylaxis

DENOMINATOR DESCRIPTION

Total number of ventilator days (see the related "Denominator Inclusions/Exclusions" field in the Complete Summary)

NUMERATOR DESCRIPTION

Number of ventilator days where patients received deep vein thrombosis (DVT) prophylaxis (see the related "Numerator Inclusions/Exclusions" field in the Complete Summary)

Evidence Supporting the Measure

EVIDENCE SUPPORTING THE CRITERION OF QUALITY

- One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Evidence Supporting Need for the Measure

NEED FOR THE MEASURE

Unspecified

State of Use of the Measure

STATE OF USE

Current routine use

CURRENT USE

Internal quality improvement

Application of Measure in its Current Use

CARE SETTING

Hospitals

PROFESSIONALS RESPONSIBLE FOR HEALTH CARE

Measure is not provider specific

LOWEST LEVEL OF HEALTH CARE DELIVERY ADDRESSED

Single Health Care Delivery Organizations

TARGET POPULATION AGE

Age greater than or equal to 18 years

TARGET POPULATION GENDER

Either male or female

STRATIFICATION BY VULNERABLE POPULATIONS

Unspecified

Characteristics of the Primary Clinical Component

INCIDENCE/PREVALENCE

See "Rationale" field.

ASSOCIATION WITH VULNERABLE POPULATIONS

Unspecified

BURDEN OF ILLNESS

See "Rationale" field.

UTILIZATION

Unspecified

COSTS

Unspecified

Institute of Medicine National Healthcare Quality Report Categories

IOM CARE NEED

Getting Better

IOM DOMAIN

Effectiveness

Data Collection for the Measure

CASE FINDING

Users of care only

DESCRIPTION OF CASE FINDING

Intensive care unit (ICU) patients 18 years of age or greater receiving mechanical ventilation without documented contraindications to deep vein thrombosis (DVT) prophylaxis

DENOMINATOR SAMPLING FRAME

Patients associated with provider

DENOMINATOR INCLUSIONS/EXCLUSIONS

Inclusions
Total number of ventilator days among:

- Patients receiving care in intensive care units (ICUs)
- ICU patients 18 years of age or greater
- Patients receiving mechanical ventilation

Exclusions

- Patients less than 18 years of age
- Ventilator day with documented contraindications to deep vein thrombosis (DVT) prophylaxis

DENOMINATOR (INDEX) EVENT

Institutionalization
Therapeutic Intervention

DENOMINATOR TIME WINDOW

Time window follows index event

NUMERATOR INCLUSIONS/EXCLUSIONS

Inclusions
Number of ventilator days where patients received deep vein thrombosis (DVT) prophylaxis*

* DVT prophylaxis includes intermittent pneumatic compression (IPC) device, or anticoagulation (e.g., heparin/warfarin).

For the purposes of this measure, DVT prophylaxis does not include the use of anti-embolism stockings such as thromboembolic disease (TED) hose or therapies such as range of motion.

Exclusions
Unspecified

NUMERATOR TIME WINDOW

Episode of care

DATA SOURCE

Medical record

LEVEL OF DETERMINATION OF QUALITY

Individual Case

PRE-EXISTING INSTRUMENT USED

Unspecified

Computation of the Measure

SCORING

Rate

INTERPRETATION OF SCORE

Better quality is associated with a higher score

ALLOWANCE FOR PATIENT FACTORS

Unspecified

STANDARD OF COMPARISON

Internal time comparison

EXTENT OF MEASURE TESTING

There were two phases of testing conducted on the intensive care unit (ICU) core measures as illustrated below:

- An alpha test that focused on feasibility of data collection and face validity, and
- A pilot test that involved a data collection period with testing for reliability of data elements required for measure calculation.

The Alpha Test

Alpha testing was conducted on an initial 9 measures in 2003. The objectives of the visits were to assess face validity, the feasibility of data collection, and to gain an understanding of the hospital's ICU environment. Face validity and feasibility of data collection were gleaned through focus group discussions, and the completion of an assessment tool for each measure tested.

Hospitals participating in the Alpha test were located in California, Indiana, Minnesota, New York, Pennsylvania, Texas, Tennessee, and Virginia. A total of 12 hospitals were visited in these states and one was accomplished through a conference call. The organizations varied from the community setting to large academic teaching hospitals. The majority of hospitals had separate Medical and Surgical Units or Mixed Medical/Surgical Units; a few had NICU's, CCU's and some hospitals had multiple units, for example, one hospital had 6 ICUs (Burn/Trauma, Vascular Surgical, Medical/Surgical, Neuro, CCU, and Cardiac Surgery). The alpha test resulted in 6 of the 9 measures moving forward for pilot testing.

The Pilot Test

Two separate and distinct test groups comprised of volunteer hospitals were utilized for the pilot test. The test objectives for each group were as follows:

Group 1:

- To assess from a three month data collection and transmission experience the following:
  - Assessment of data element reliability
  - Assessment of data collection effort
  - Discussion and identification of potential measure specification enhancements.

Group 2:

- To assess from a one-month data collection (without transmission) experience the following:
  - Data collection effort
  - Identification of potential measure specification enhancements.

Group 1 test group was comprised of 10 hospitals already participating in the Keystone Project (collaboration with the Johns Hopkins School of Medicine and the Michigan Hospital Association (MHA) to study the impact of processes of care on ICU patient outcomes). The 10 hospitals were geographically distributed across the state. The hospitals ranged from small (83 beds) to large (greater than 1067 beds), with correspondingly sized ICUs from 5 to 20 beds. Two hospitals were experienced APACHE users.

Ten pilot test hospitals were visited to re-abstract a sample of previously transmitted records. A total of 118 records were re-abstracted. The method of data collection for re-abstraction was retrospective, whereas hospital abstraction activities were primarily concurrent. For the ventilator bundle measures (ICU 1,2,3) Joint Commission staff rounded in the ICU approximately one hour after the completion of hospital staff rounding in order to verify head of bed elevation, stress ulcer disease (SUD) and deep vein thrombolysis (DVT) prophylaxis.

Group 2 consisted of 30 hospitals that were randomly selected from approximately 100 volunteer hospitals based on geographic location, bed size, urban/rural, teaching/non-teaching, type of ICUs, intensivist/no intensivist, Apache user/non-Apache user, National Nosocomial Infections Surveillance System (NNIS)/ non-NISS hospital.

EVIDENCE FOR RELIABILITY/VALIDITY TESTING

Lawler N. (Jonit Commission on Accreditation of Healthcare Organizations (JCAHO)). Personal communication. 2006 Feb 10. 1 p.

Identifying Information

ORIGINAL TITLE

ICU-3: deep vein thrombosis (DVT) prophylaxis.

MEASURE COLLECTION

Joint Commission Intensive Care Unit Measure Set

DEVELOPER

Joint Commission on Accreditation of Healthcare Organizations

ADAPTATION

Measure was adapted from another source.

PARENT MEASURE

Deep Venous Thrombolysis (DVT) Prophylaxis (VHA/Institute for Healthcare Improvement [IHI] Project)

RELEASE DATE

2005 Feb

MEASURE STATUS

This is the current release of the measure.

SOURCE(S)

Specifications manual for national hospital quality measures - ICU. Oakbrook Terrace (IL): Joint Commission on Accreditation of Healthcare Organizations (JCAHO); 2005. various p.

MEASURE AVAILABILITY

The individual measure, "ICU-3: Deep Vein Thrombosis (DVT) Prophylaxis," is published in "Specifications Manual for National Hospital Quality Measures - ICU." This document is available from the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) Web site. Check the JCAHO Web site regularly for the most recent version of the Specifications Manual and for the applicable dates of discharge. For further information, refer to www.jointcommission.org.

NQMC STATUS

This NQMC summary was completed by ECRI on January 17, 2006. The information was verified by the measure developer on February 10, 2006.

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